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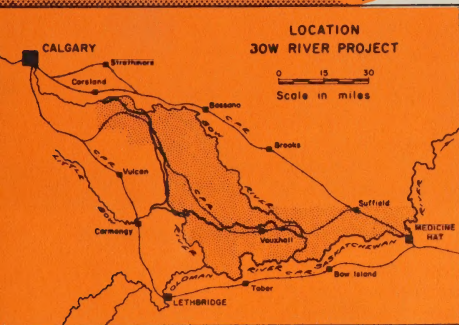
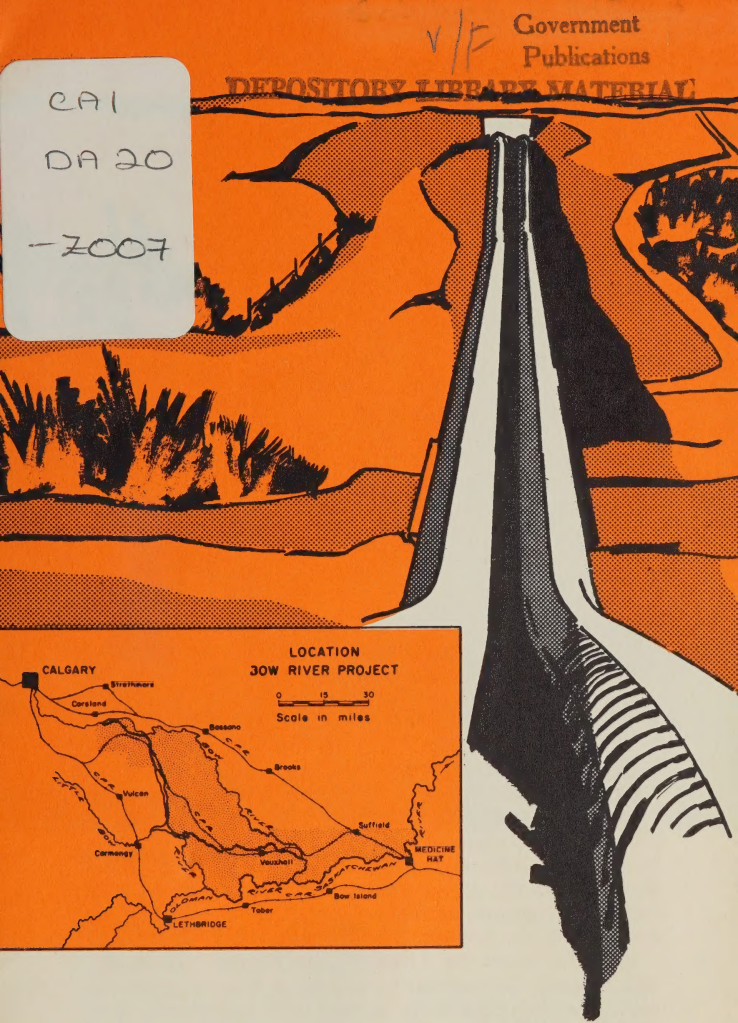
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BOW RIVER IRRIGATION PROJECT

PFRA

Prairie farms rehabilitation admin

CANADA DEPARTMENT OF AGRICULTURE

EARLY HISTORY

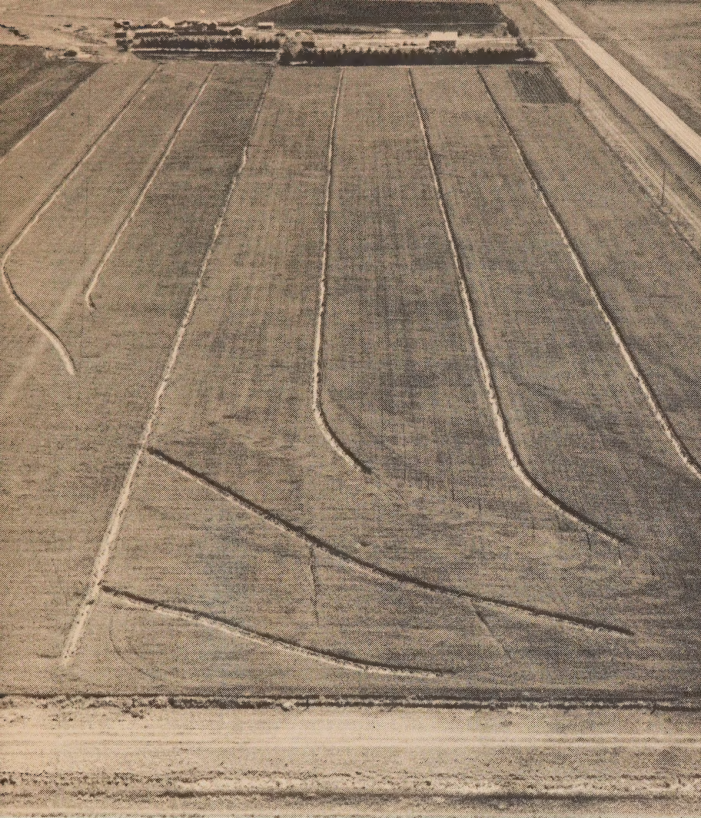
The Bow River Irrigation Project was started in 1909 by an English firm, the Southern Alberta Land Company. Several other companies operating in the area at the time acquired land and provided irrigation works. But financial difficulties and World War I prevented water being made available. In 1917, the companies merged to form the Canada Land and Irrigation Company.

Although no irrigation water had been delivered prior to amalgamation, much work had been done. Between 1910 and 1912, about 11 million cubic yards of material, representing some 260 miles of main and branch canals, had been excavated by horse-drawn scrapers. Dams, intakes, outlets, flumes, drop structures, headgates, canal bridges and other structures had also been built.

Water was delivered first in 1920. That year 9,400 irrigable acres were serviced, followed by 9,800 acres in 1921 when the value of all crops produced averaged \$24.77 per acre. Four years later, 13,830 acres were under the ditch, and revenue reached \$42.29 per acre. By 1928, the irrigable acreage almost doubled, with 131 farmers operating. Early in this development the Village of Vauxhall sprung up.

But the boom period did not continue. The drought of the '30s made it impossible for dryland farmers to grow crops. Irrigation farmers, while able to produce crops, were affected by the depression of that time. Grain prices fell and irrigation farmers, burdened with costs of irrigation, could not meet their commitments. As a result, the company lost money year after year.

In 1935, when the Prairie Farm Rehabilitation Act was passed, the company received a federal grant for much needed repairs to canals and structures, thus enabling continuance of operation.



Irrigation patterns near Vauxhall.

BOW RIVER IRRIGATION PROJECT

The Bow River Project is one of the major irrigation schemes in Western Canada, providing water for some 123,000 irrigable acres in an area where about 240,000 acres may eventually be brought under irrigation.

The project, situated west of Medicine Hat, was originally privately owned, but since 1950 has been operated by the Government of Canada. It is one of several areas operated under the Prairie Farm Rehabilitation Act, with much of the land used to resettle farmers from the drier areas of the three prairie provinces. Many veterans have also been re-established on the project.

WESTERN AND CENTRAL BLOCKS

The Bow River Project is in a flat, semi-arid area of Alberta. The main canal stretches from Carseland, about 30 miles east of Calgary, to Ronalane. The project is divided into two blocks—western and central—that lie between the Bow and Oldman Rivers, which form its north and south boundaries.

Water is made available by means of the Carseland Dam and diversion works on the Bow River, and about 95 miles of main canal, and hundreds of miles of branch canals and laterals, ending again at the Bow River just south of Ronalane.

Of the 123,000 acres presently being irrigated, 25,000 are in the west block which is operated by the Province of Alberta, and 93,000 acres in the central block operated by PFRA for the Federal Government. The central block has been divided into two sections, including 66,000 acres in the Vauxhall district, and 27,000 acres in the Hays region. The latter has been used for resettling farmers from poor crop areas of Alberta, Saskatchewan and Manitoba.

At the far northwest corner of the project, an area containing 5,000 irrigable acres on the Blackfoot Indian Reserve is supplied with water, and is operated by the Indians.

There are no plans at present for extension of services to an eastern block, which lies entirely north of the South Saskatchewan River, extends from Ronalane some 40 miles east to Medicine Hat, and then north about 13 miles to the boundary of the Department of National Defence Experimental Station at Suffield.

AGREEMENT

Following World War II, plans went forward for Canada to purchase the holdings of the Canada Land and Irrigation Company, and thereby further PFRA's resettlement program that had already proved highly successful on the

Rolling Hills Project in Alberta, and on several smaller ones in Saskatchewan.

In 1950, the Federal Government purchased the company's assets in the project for over \$2,300,000. These included over 138,000 acres of land, structures, and equipment. Canada assumed responsibility for all main reservoirs, works and connecting canals servicing the three districts. This included the western block which is operated by Alberta, with all engineering services supplied by PFRA.

CONSTRUCTION

Acting through PFRA, the Government of Canada embarked on a program of construction immediately. Canals and structures were renovated, including the diversion weir and head-gates near Carseland. Dams at the north and south ends of Lake McGregor were each raised 14 feet, and the Little Bow Dam was also repaired. A new major structure, the Travers Dam, was added to create a large reservoir south of Lake McGregor. This dam is 140 feet high and 3,000 feet long. It impounds 265,000 acre feet of water, 100,000 acre feet of which are available for irrigation. Scope reservoir, or Reservoir No. 1 south of Hays, was also created by construction of a dam, thus providing four main storage reservoirs. Huge syphons were built to transport water through several depressions. These improved facilities in the older established irrigation districts, and have resulted in new lands being opened for settlement.

Before Canada took over the project, the Lake McGregor and Little Bow reservoirs had a total storage capacity of 200,000 acre feet. Improvements and new construction increased the usable capacity to 346,000 acre feet. For irrigation, Lake McGregor can provide 150,000 acre feet of water, Travers 100,000, Scope 14,000 and Little Bow 12,000 acre feet. These reservoirs, combined with several smaller ones, provide sufficient water for full development of the project.



**Weir near Carseland diverts water for project.
Lake McGregor showing canal and Lomond Crossing.**





Irrigating potatoes northeast of Vauxhall.



Sunflowers grown as specialty crop near Hays.








Mechanical grazing demonstration at Hays.

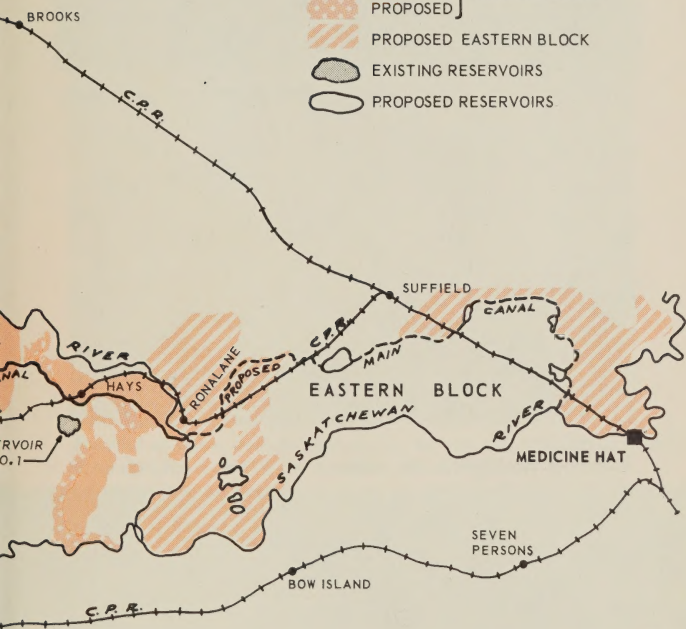


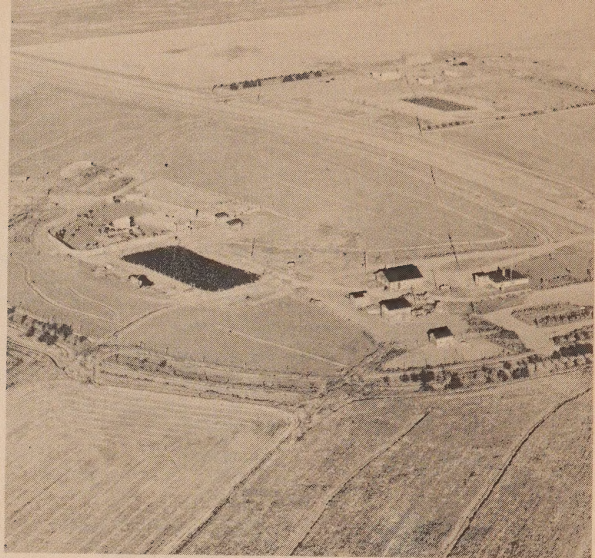


BOW RIVER PROJECT

LEGEND

- MAIN CANALS
- - - PROPOSED MAIN CANALS
-  IRRIGATED } WESTERN BLOCK
-  PROPOSED } WESTERN BLOCK
-  IRRIGATED } CENTRAL BLOCK
-  PROPOSED } CENTRAL BLOCK
-  PROPOSED EASTERN BLOCK
-  EXISTING RESERVOIRS
-  PROPOSED RESERVOIRS





New farmsteads near Hays.

Stacking alfalfa hay near Hays.





**Hamlet of Hays, commercial center for the Hays Irrigation District.
Drop structure and main canal north of Vauxhall.**



RESETTLEMENT

The federal resettlement policy was designed to make the shift from one area to another, and from one type of farming to another, as easy as possible for the farmer and his family. Although each application was judged on the basis of need, a farmer to be eligible had to be an active one, owning at least one quarter section of dry land which he could exchange with PFRA for an irrigated unit. A farmer's son, on reaching age 21, could also qualify by arranging to have a quarter section of dry land transferred to him from his father. To avoid speculation, land could not be purchased for the purpose of exchanging it for an irrigated unit.

Resettlement of the Bow River Project went smoothly and applications always exceeded the number of available parcels of land. At present, all parcels are being irrigated and good production standards maintained.

Originally, each farmer was allotted approximately 160 acres of land in the project, with the irrigable acreage ranging from 110 to 140 acres. In recent years, many farmers have increased the size of their holdings. As settlers leave the district, their lands have been obtained by farmers in the area. Settlers have left on account of ill health, better business opportunities elsewhere, and other reasons.

There are now 485 settlers' families on the project. Of these, 154 have come from the drier areas of southern Saskatchewan and Alberta, and even a few from Manitoba. In moving these families to the Bow River Project, PFRA arranged for the transportation of settlers' effects, the shipment of livestock, and provided them with temporary accommodation, upon arrival, until houses could be erected on the project. Seed grain was made available, land leveling and other allied services were provided at cost, and classes were conducted to help the farmer adjust from dryland to irrigation farming. Today, the settler can get a cash loan to improve his housing accommodation, and to stock and fence larger holdings that go to make up an economic farm unit.

IRRIGATION

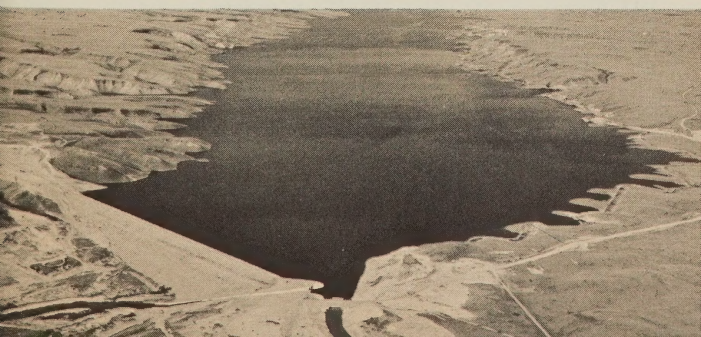
The Bow River Project is in a mixed farming area. Coarse grains, flax, and alfalfa hay are chiefly grown, along with specialty crops such as peas, oilseeds, and potatoes. Over 3,000 acres of potatoes are being produced annually for local consumption and for processing plants some distance away. The potato crop has attracted considerable interest.

The livestock industry too, has contributed to the success of farmers on the project, and continues to be encouraged. PFRA maintains three pasture areas, two of which are irrigated, and these provide grazing for about 1,700 head of cattle and some 2,600 sheep and lambs. Hogs and turkeys are also being marketed in large numbers.

The movement of settlers to the project has produced other benefits. The land which they exchanged for irrigable acreages was taken over by PFRA, re-grassed and otherwise improved, and turned into pasture that has been made available to farmers remaining in the dry districts. The additional pasture has enabled many of them to enlarge their herds and place their farming operations on a better economic basis.

Increased settlement on the Bow River Project will first require additional irrigation works. This will involve the eastern block of the project extending to Medicine Hat. Much survey and planning work has been done in this area, with locations for eight small reservoirs designated. Other investigations and trials are being conducted to determine the feasibility of pumping water to large areas of the project that cannot be serviced by gravity flow methods of distribution.

Travers Dam and reservoir.



Statistics of Major Structures in Bow River Project

TRAVERS DAM

Height of dam	140 feet
Length of dam	3,000 feet
Base width of dam	1,000 feet
Volume of dam	4,500,000 cu. yds.
Length of reservoir	12 miles
Area of reservoir	5,700 acres
Total reservoir capacity	265,000 ac. ft.
Spillway capacity	7,700 c.f.s.

LAKE MCGREGOR

(North Dam)

Height of dam	45 feet
Length of dam	3,600 feet
Base width of dam	240 feet
Length of reservoir	20 miles
Area of reservoir	13,064 acres
Total reservoir capacity	300,000 ac. ft.

(South Dam)

Height of dam	39 feet
Length of dam	2,900 feet
Base width of dam	220 feet

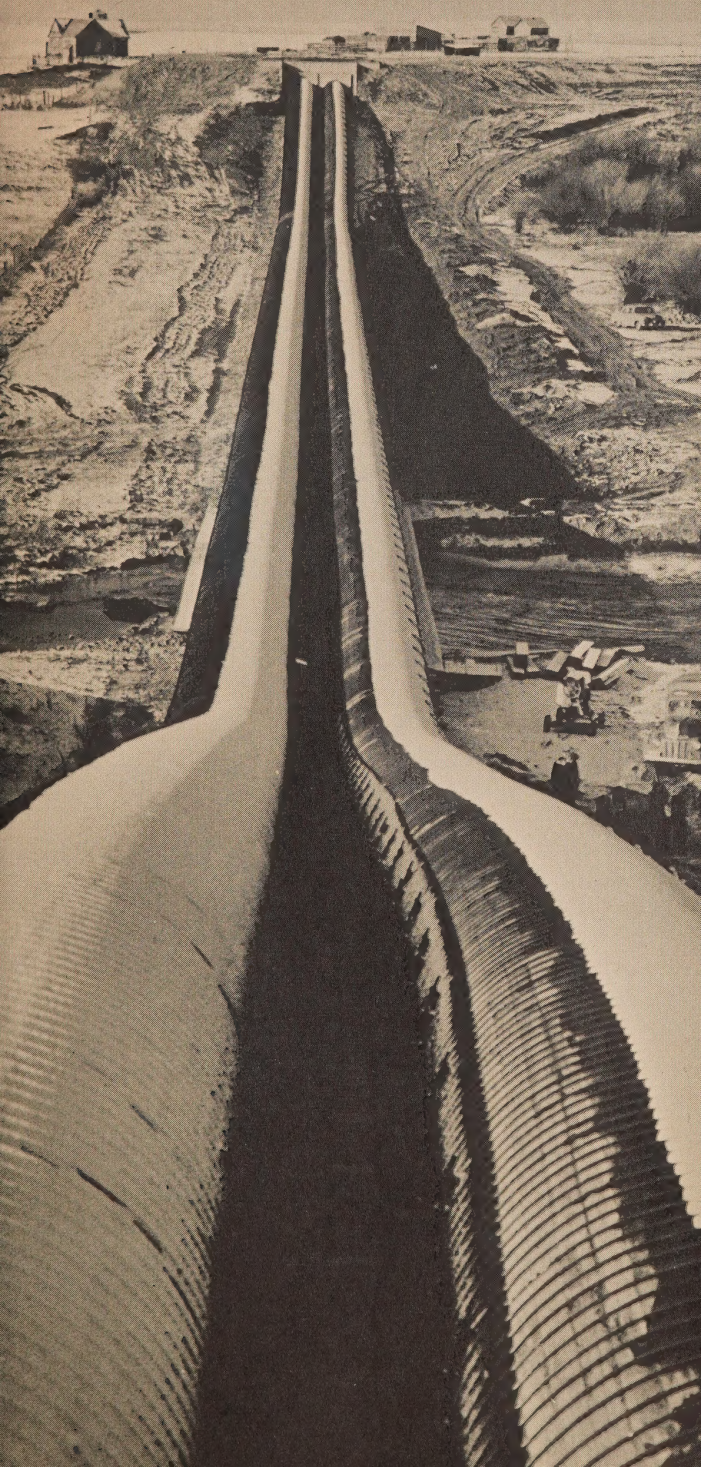
LITTLE BOW DAM

Height of dam	23 feet
Length of dam	4,000 feet
Base width of dam	110 feet
Area of reservoir	2,000 acres
Total reservoir capacity	30,000 ac. ft.

SCOPE DAM (Reservoir No. 1)

Height of dam	47 feet
Length of dam	6,200 feet
Base width of dam	290 feet
Area of reservoir	1,560 acres
Total reservoir capacity	14,400 ac. ft.

West Arrowwood siphon near Carseland weir.



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